

Summer 2007 Newsletter

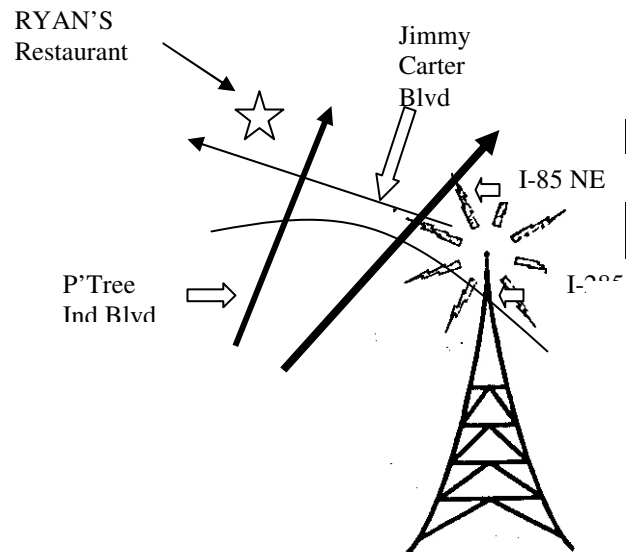
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JOIN SARS! Dues are \$12 per calendar year. Join after June 30 and dues are pro-rated to \$6.00 for the remainder of the year. Send payment to the SARS address above.

SUPPORT YOUR CLUB!

The Southeastern Antique Radio Society meets on the second Monday of each month at RYANS Restaurant, 7045 Jimmy Carter Blvd. Norcross, GA 30093. Meetings start at approximately 6:30 PM. Most attendees arrive early and eat before the meeting. In addition to club business, meetings have a "Show and Tell" session where members bring in items to display and discuss. All are encouraged to participate in this activity. See the monthly schedule elsewhere in the newsletter and the map below.

**ANNUAL DUES ARE
NOW PAYABLE! ONLY \$12!
JOIN OR RENEW TODAY!**



SARS RADIO CLUB

Summer BULLETIN September 2007

Check out our website! <http://www.sarsradio.com>

GENERAL INFO

Southeast Antique Radio Society
113 Laurel Ridge Drive
Alpharetta, GA 30004

Club Officers:

President: Rich Rodgers

Vice President: Les Cane

Publicity & Membership: Bob Niven

Secretary: Joseph Simonetti

Treasurer: Tom Knutson

Newsletter Editor: Mark Palmquist

Webmaster: Rich Rodgers



Rare Zenith 9S1429 with 6AF6 Eye Tube

Reconstruction based on remains of original cabinet



Simple AM Transmitter

By Jim DelPrincipe

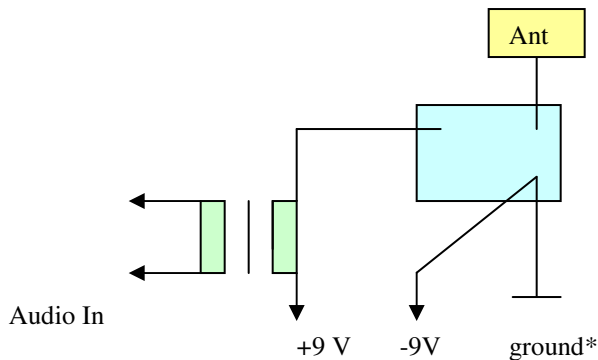
The simplest AM transmitter has a minimum of parts and performs surprisingly well. At the heart is a EXS-2100X 1MHZ clock chip that is completely self-contained, fixed frequency and runs well on a single 9 volt battery. The other component is a small (273-1380) audio transformer from Radio Shack that is used to couple your audio source, such as a CD player, to the clock chip. This serves to “modulate” the audio on the signal, which means it impresses the audio intelligence on the radio frequency carrier. The result is a transmitter, which can broadcast your favorite CDs or other source of entertainment.

The clock chip can be purchased from Mouser electronics for about \$ 1.60 and the transformer can be had from any Radio Shack for a similar price.

You can choose to mount it into a small box or leave it open to admire its simplicity.

You can add jacks, switches and any other feature but the simplest is probably best.

Here is the schematic:



The transformer is 1,000 Ohms to 8 Ohms. Connect the 1,000 Ohms side to the chip as shown, and the positive side of the battery. Connect the 8 Ohms side to the audio source like a CD player’s headphone jack. Connect the negative side of the battery to the ground terminal of the chip and also to a good ground, such as a cold water pipe. *

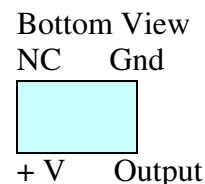
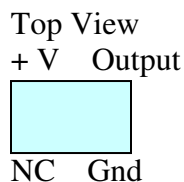
The output of the chip connects to an antenna. You can use a 9 foot length of wire for this. It should be hung free of any metal objects and preferably vertical.

Now, connect the battery and start your CD player. Tune an AM radio to 1,000 KHZ (One thousand kilohertz) or about mid way on the dial. You should hear your music or whatever program you are playing. If it does not work, always check your connections first. On any construction project, wiring errors are the most common cause of trouble. If it still does not work, check the 9 volt battery. Be sure to use a known good, fresh battery.

* A word about grounds. Many homes today, use plastic pipe. This cannot be used for a ground. If you do not have copper or iron pipes, you can use the center, ground pin on an outlet. Just be sure not to use the hot or neutral contacts. These are blade shapes and the ground is more or less round. Oh, yes. Never, ever use a gas pipe for a ground.

Chip Layout:

Pin 1 is the NC – no connection
It is the corner with the square edge



Building and Testing the AM Transmitter

By Mark Palmquist

Several SARS Members built Jim's AM transmitter at a recent meeting. I was unable to attend but picked one up from Jim when one of my radio repair customers asked about an AM transmitter to enable him to play '20s music stored on his Apple iPod into his Atwater Kent model 20 radio and other radios around his house. Jim's kit included all the parts including a battery, which I eventually replaced with a regulated "wall wart" 9-volt DC power supply smoothed out a bit with a 1000 uFd 35-volt electrolytic capacitor. The first step was to mount the components to the circuit board, which Jim had already drilled to enable mounting of the audio transformer. Jim provided a 1/8 phone plug for the input and a battery clip and 9-volt battery, as shown in **Figure 1** below. The device draws about 5 milliamps from the battery when operating. A typical 9-volt battery has an amp-hour rating of 500 milliamp-hours, so should last about 100 hours.

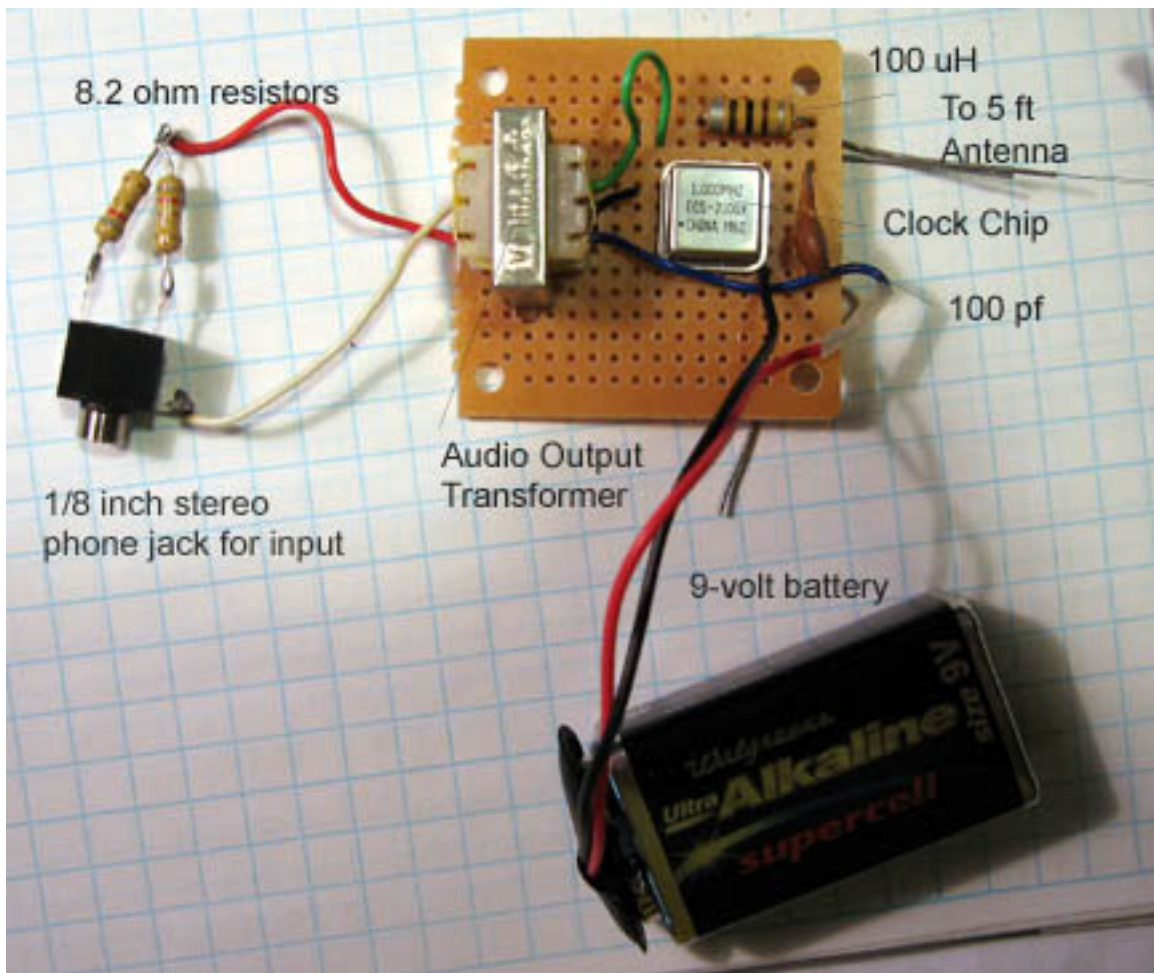


Figure 1 Parts layout for Jim's AM Transmitter

Testing

I connected the output to a scope and the input a 400 Hz sine wave from an audio signal generator, with signal level of about 0.5 volts RMS. This is typical of the signal from an iPod or

CD player. Since the input is monophonic, I connected the 2 channels of the 1/8 inch stereo phone jack through 8.2 ohm resistors to the common input of the audio transformer. This gives each output channel of the program source a load similar to a set of earphones and prevents shorting the left channel output directly to the right channel output of the source. I connected the output of the transmitter to the scope and observed 1 MHz square wave with the upper part modulated by the output from audio generator. See the Photo in **Figure 2**.

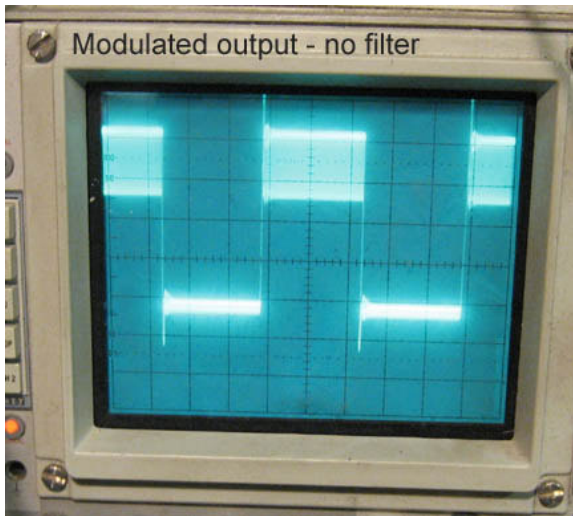


Figure 2 -Modulated Antenna output with no LC filter

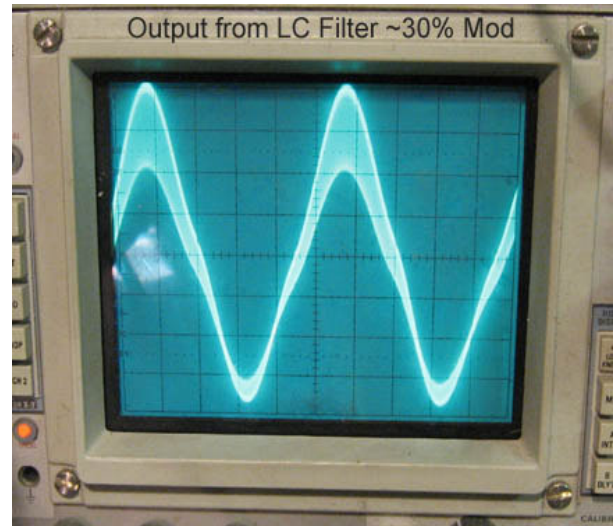


Figure 3 Antenna output with LC filter connected

The spectrum from a square wave transmitter would not be as pure as that of a sine wave transmitter so Jim suggested using a simple LC low pass filter to clean up the signal a bit. The filter consisted of a 100 uH inductor in series with the antenna lead and a 100 pF capacitor to ground. This is shown in the assembled unit photo of **Figure 1**. A scope trace of the filtered output is shown in **Figure 3**. Since the harmonics of the 1MHz transmitter would be out of the broadcast band range this mod does not improve the quality of transmission, but just looks better on the scope and is more like the signal broadcast by a real radio station.

The next task was to connect a 9-foot antenna lead to the output of the LC filter and tuning my Radio Shack portable to 1000 MHz on the Broadcast band. I was able to receive a clean signal from about 50 feet away from the antenna, which was in my underground basement, and an audible signal all the way out to the mail box, about 120 feet away. I then shortened the antenna to 2 feet and laid it inside the cabinet of the AK 20. It broadcast directly to all the interstage coupling coils of this TRF receiver simultaneously, and I was able to play the transmitted signal without much effort at tuning the 3 dials on the front of the radio. I did not have to connect an external antenna to the AK 20 to make it work. The customer was very happy to be able to play his own program material through his AK model M horn.

I liked this arrangement so much I built myself a transmitter to enable period programming of the radios I am installing in my long-awaited "radio room". Thanks much to Jim for his simple transmitter design. Nothing like the sound of "The Charleston" heard through a vintage horn speaker like Grandpa used to have. When customers come to pick up their repaired vintage radios, they are amazed that their radios are still playing Glenn Miller tunes from the '40s.

SARS Meeting Dates for 2007 - Mark Your Calendars!

Date	Show & Tell Topic	Meeting Topic	Speaker
Nov 12, 2007	“S” Radios Sparton, Steward Warner etc	TBA	TBA
Dec 10, 2007	“F” to “P” Radios Farnsworth to Packard Bell	TBA	TBA

Upcoming Radio Events 2007

Date	Event	Location	Contact
Nov 3-4	Lawrenceville Hamfest	Lawrenceville, GA	http://www.totr-radio.org